

BAA 06-TSDD
Proposer Information Pamphlet

for
Defense Advanced Research Projects Agency
Strategic Technology Office

Threat Agent Cloud Tactical Intercept and Countermeasure
Program
Phase II and Phase III - System Development and
Demonstration

Technical POC: TACTIC@darpa.mil

This BAA will be open for one (1) year from the date of its publication at www.fbo.gov.

NOTE: The Government anticipates that the majority of funding for this program will be committed during initial selections*. To be considered for funding during initial selections, full proposals must be received no later than 1600 ET on **21 March 2007** at DARPA. Proposals submitted under this BAA may be either mailed or hand-delivered. Mailing address:

Defense Advanced Research Projects Agency
ATTN: BAA06-TSDD
3701 North Fairfax Drive
Arlington, VA 22203-1714

For hand deliveries, the courier shall deliver the package to the DARPA Visitor Control Center (VCC) at the address specified above. The outer package, as well as the cover page of the proposal must be marked "TACTIC Program BAA06-TSDD."

A Bidders' Conference will be held on **23 January 2007** at the ANSER Conference Center, 2900 South Quincy Street, Suite 800, Arlington, VA 22206, starting at 0900 ET, to encourage discussion and teaming on this topic. Additional information on the Bidders' Conference is contained inside this PIP. Questions and answers from the conference will subsequently be posted to the TACTIC Program website for proposer review at <https://dtsn.darpa.mil/TACTIC>.

NOTE: It is not mandatory to attend the Bidders' Conference to respond to this BAA.

*The Government expects that the majority of available program funding will be awarded to proposals that are submitted by the **21 March 2007** submission deadline. However, the Government will accept, and consider for award, proposals submitted for up to one (1) year from the date of this BAA publication (**05 January 2008**).

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1 TACTIC Phase II and Phase III (Option) - System Development and Demonstration

The Defense Advanced Research Projects Agency (DARPA) Strategic Technology Office (STO) is soliciting proposals (to include technical and cost volumes) from qualified corporations, research institutions, universities, Federally Funded Research and Development Centers (FFRDCs), and Department of Energy (DOE) laboratories in support of the Threat Agent Cloud Tactical Intercept and Countermeasure (TACTIC) Program, under Broad Agency Announcement (BAA) 06-TSDD (TACTIC System Development and Demonstration). This solicitation applies to TACTIC Phase II and the Phase III option. Note that TACTIC Phase I was successfully completed in April 2006.

This BAA is being released by DARPA through the United States Army Research, Development, and Engineering Command – Edgewood Chemical Biological Center (US Army RDECOM ECBC).

This BAA affords proposers the choice of submitting proposals for the award of a Procurement Contract or other such appropriate award instrument. The Government reserves the right to negotiate the type of award instrument determined appropriate under the circumstances. Some proposals, although deemed technically acceptable, may not be funded.

All responsible sources capable of satisfying the Government's needs are encouraged to submit a proposal for consideration. The Government encourages proposals from non-traditional defense contractors, non-profit organizations, educational institutions, small businesses, small disadvantaged business concerns, Historically-Black Colleges and Universities (HBCU), Minority Institutions (MI), large businesses, and Government laboratories. Teaming arrangements between and among these groups are encouraged. Government/National laboratory proposals may be subject to applicable direct competition limitations, though certain FFRDCs are exempted per P.L. 103-337 §217 and P.L. 105-261 §3136. Any responsible and otherwise qualified proposer is encouraged to respond.

2 Program Background and Goals

The threat of CWA and BWA threat cloud attacks against friendly forces is of military concern, because many existing and prospective adversaries of the US and their allies are suspected to have interests in, or capabilities to produce, CWA/BWA weapons. The specific concern addressed here is the threat of chemical/biological aerosol/vapor clouds released against mobile US troops on the battlefield as well as fixed sites such as Sea Ports of Debarkation (SPODs), Aerial Ports of Debarkation (APODs), and Forward-Operating Bases (FOBs). Such releases could be produced during military operations either by defensive measures against an adversary or by intentional agent dissemination/release by an adversary. The release of these agents can have profound effects on US military and allied forces by placing large numbers of troops at risk and by disrupting mission tempo by contaminating the battlespace with potentially deadly amounts of agent.

Despite the fact that high-level threats to US military and allied forces from enemy CWA/BWA attacks have been recognized for many years, the paradigm for responding to such attacks has not changed over the years – it remains survival by assuming a protective posture followed by response to the attack after significant delay due to the time necessary to don Mission Oriented Protective Posture (MOPP) gear and conduct decontamination protocols. This places a large logistics burden on today's highly mobile forces to carry the proper protective gear and sufficient quantities of decontamination supplies to respond to such an attack.

The TACTIC Program seeks to change the current paradigm of passive protection to proactive CI and CM of the threat cloud to eliminate the need for MOPP and decontamination. System studies (see Appendix D) have clearly indicated that the greatest CI and CM potential exists at the time of, or very shortly after, the initial cloud formation because it is at this point that the cloud is most concentrated. Upon initial release, this cloud contains a high concentration of agent that disperses as the cloud expands and transports downwind over time. Modeling studies have shown that aerosol clouds of chemical and biological agents have initial concentrations on the order of 10g/m^3 (chemical) and 10^8 particles/ m^3 (biological) in the early (~ 1 minute) stages of development.

In support of the TACTIC program goals, Phase I (Technology Development) was initiated in 2004 and completed in April 2006. Phase I of the program focused on development of two critical capabilities: 1) technologies that can rapidly classify and identify chemical and biological airborne clouds with low false-alarm rates, and 2) technologies that can countermeasure (via precipitation and/or neutralization) the clouds before they can reach their intended targets.

At the completion of Phase I of the TACTIC program, DARPA contractors developed and tested technologies (and associated models) that provide CI and CM capabilities across a broad spectrum of CWA/BWA agents, including nerve, blood, blister, and toxic industrial chemical (TIC) agents as well as toxin, bacterial (both vegetative cells and spores), and viral biological agents. These individual CI and CM technologies were tested and evaluated in a government refereed static aerosol chamber at the United States Army Research, Development, and Engineering Command – Edgewood Chemical Biological Center (US Army RDECOM ECBC), Aberdeen Proving Ground (APG), MD.

The completed Phase I program metrics were:

1. Successful performance of the CI and CM technologies in Government Refereed Testbed:
 - a) The Government established CWA/BWA simulant clouds with initial concentrations of 10g/m^3 (chemical) and 10^8 particles/ m^3 (biological) in static (closed) aerosol test chambers.
 - b) Classify/Identify CWA/BWA simulant aerosol clouds with a P_D of at least 0.9 and a P_{FA} of $< 10^{-2}$ in less than one minute.
 - c) Countermeasure CWA/BWA simulants by reducing the effective aerosol concentration by at least a factor of 10^2 in less than five minutes for the mid-

term metric and a factor of 10^4 in less than five minutes for the final Phase I metric.

Testing in Phase I clearly indicated that enhanced standoff classification/identification and high levels of countermeasure could be achieved in large closed chambers (More information on the individual technologies can be found in Appendix A of this PIP).

The overarching goal of the TACTIC Program is to develop and test an integrated system that can classify/identify and countermeasure aerosol clouds of toxic and infectious threat agents released using militarily significant scenarios. Specific threat scenarios and agents of current interest to the TACTIC program are provided in the CLASSIFIED APPENDIX to this PIP. Generally, however, CI and CM at distances out to 10km against a broad class of agents are required.

3 System Development Objectives

Phase II

For the Phase II effort, the performer must develop CI and CM hardware subsystems and test them with releases in government refereed ambient breeze tunnels as described in §4 and §5. The sub-systems developed and tested in Phase II must be developed with size, weight, and power requirements that match with the delivery platforms that the proposer plans to employ in Phase III (option).

The performers must develop end-to-end mathematical system models that capture the biology, chemistry, and physics of the CI and CM mechanisms sufficiently to enable the prediction of the P_D and P_{FA} (for a given time to classify/identify) as well as threat defeat level for a broad range of chemical and biological threats under variations in range, agent concentration, clutter concentration, and environmental conditions.

An initial CONOPS must be developed for the proposed system that clearly addresses the approach to counter the threat scenarios specifically outlined in the CLASSIFIED Appendix. A methodology for estimating the logistics and operations and maintenance (O&M) requirements for the proposed system must be developed. It is highly desirable that the CONOPS, logistics, and O&M requirements development methodology be included in the end-to-end system model.

In Phase II, it is expected that the performer will evolve the Conceptual System Design from their proposal into a Preliminary System Design through a series of trade studies, testing, and analyses at performer facilities. The performer will then mature the Preliminary System Design into a system that will undergo refereed Government testing. The results of Phase II analyses and refereed testing will form the basis for a Critical System Design Review of the fully integrated TACTIC system that the performer proposes for the optional Phase III effort.

Phase III (option)

If chosen by the Government, the prototype system presented at the Phase II CDR will be constructed by the performer and tested at full-scale using open-air releases of simulants in the Phase III option. The performer must integrate the CI and CM subsystems with delivery platforms (of their choosing, with Government approval) and demonstrate the system in open air releases that simulate (to the extent possible) those in the CLASSIFIED appendix. The release cloud must be classified/identified and countermeasured as described in §4 and §5.

The performer must complete the development of the system model, refine the CONOPS, logistics and O&M requirements, develop the command and control (C²) of the prototype system to enable testing, and demonstrate the performance of the integrated system against the threat scenarios in the CLASSIFIED Appendix.

The Final Report, to be delivered to DARPA by the performer at the end of Phase III (option), will contain all experimental results, analysis, and models from the Phase II and III efforts and will form the basis of transition of the system to the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD).

4 Government Testing and Evaluation**Phase II**

For the Phase II effort, CI and CM prototype sub-systems will be tested and evaluated using the Joint Ambient Breeze Tunnel (JABT) facility located at Dugway Proving Ground (DPG), Utah (UT) (Appendix C) or a similar facility that is chosen by the Government. The JABT facility provides an environment that enables limited downwind dispersion of the simulant threat cloud and is instrumented to readily provide accurate measurement of the effectiveness of the prototype system. Prototype sub-systems will be transported to the Government test site by each performer. Performers will work with Government testbed personnel in the operation of their equipment during simulant testing. Performers will work with the Government testbed personnel to establish the proper simulants and protocols for the testing. A test plan and Test Readiness Review (TRR) must be completed and approved by DARPA and the Government testing facility prior to the initiation of testing. Extensive testing with the natural variations in background clutter will be carried out to establish CI and CM prototype sub-system performance with statistical significance.

Phase III (option)

For the Phase III optional effort, the CI and CM prototype system, integrated with delivery platforms, will be tested and evaluated using open-air releases at DPG, UT or other site that is chosen by the Government. Open-air releases provide an environment with the full range of agent cloud formation and downwind dispersion variability. The performer will be required to transport their system to the Government test facility and work with Government testbed personnel in the operation of the equipment during simulant testing. Performers will work with the Government testing personnel to establish the proper simulants and protocols for the testing. A test plan and TRR must be completed and approved by DARPA and the Government testing facility prior to the

initiation of testing. Extensive testing with natural variations in background clutter will be carried out to establish full system performance with statistical significance.

5 Program Metrics

In order for the Government to evaluate the effectiveness of a proposed solution in achieving the stated program objectives, proposers should note that the Government hereby promulgates the following program metrics that may serve as the basis for determining whether satisfactory progress is being made to warrant continued funding of the program. Although the following program metrics are specified, proposers should note that the government has identified these goals with the intention of bounding the scope of effort, while affording the maximum flexibility, creativity, and innovation in proposing solutions to the stated problem.

Phase II program metrics:

1. DARPA acceptance of the Preliminary Design Review (PDR) Report at the mid-point of Phase II.
2. Performance of the CI and CM sub-systems at the Government Testbed:
 - a) The Government will establish CWA/BWA simulant clouds with initial concentrations of 10g/m^3 (chemical) and 10^8 particles/ m^3 (biological) at the inlet of the JABT at DPG, UT (or other facility that is chosen by the Government).
 - b) The CI sub-system must classify or identify the CWA/BWA simulant release with a P_D of at least 0.9 and a P_{FA} of $< 10^{-2}$ in less than one minute as the cloud disperses down the JABT (or other facility) with a wind velocity in the range between 0.5 and 5m/s.
 - c) The CM sub-system must provide a countermeasure to the agent, reducing the effective concentration by at least a factor of 10^4 , in less than five minutes as the cloud disperses down the JABT (or other facility) with a wind velocity in the range between 0.5 and 5m/s.
3. DARPA acceptance of the Critical Design Review (CDR) Report at the end of Phase II activity.

Phase III (option) program metrics:

1. Using the Concepts of Operation (CONOPS) developed in the program, modeling and simulation of the full-scale operational TACTIC system must demonstrate that the attack scenarios in the classified appendix can be effectively detected and defeated.
2. Logistics and Operation and Maintenance (O&M) requirements for the full-scale systems must be identified and quantified.
3. Performance of a fully integrated CI and CM system (with delivery platforms) at the Government Test site:

- a) The Government will establish an open air release of CWA/BWA simulant clouds with initial concentrations of 10g/m^3 (chemical) and 10^8 particles/ m^3 (biological) at DPG, UT (or other facility that is chosen by the Government) that simulate the threat scenarios in the CLASSIFIED Appendix of the PIP.
- b) The integrated CI and CM system must classify or identify the CWA/BWA simulant release with a P_D of at least 0.9 and a P_{FA} of $< 10^{-2}$ in less than one minute and reduce the effective simulant concentration by at least a factor of 10^4 in less than five minutes for these open air releases.

6 Technical Scope

To optimally counter the chemical/biological warfare (CBW) threat, a System-of-Systems (SoS) approach may ultimately be developed. Nominally, such a system would: (1) detect the CWA/BWA weapons delivery platform, (2) detect and map a chemical or particulate cloud released from a weapon, (3) classify/identify the agent in the cloud (to determine threat vs. non-threat), (4) countermeasure the cloud, and (5) determine the efficacy of the countermeasure treatment (to call “all clear” or to alert troops). The Phase II and optional Phase III TACTIC effort specifically seeks to develop, demonstrate, and integrate sub-systems (3) and (4) in anticipation of the development of the SoS. However, DARPA and the Defense Threat Reduction Agency (DTRA) are collaborating on an effort to develop sub-system (2) for detecting and mapping particulate clouds (see Appendix B). It is expected that an analogous system for detecting/mapping a chemical release will also be developed. The proposers should assume that the trigger function (1) and the cloud mapping (2) capability currently exists or will be developed in time for testing at the Government testing facility. Finally, the development of sub-system (5) is specifically not part of the TACTIC effort. However, CI sub-systems (3) that could readily evolve to support this critical sub-system would be of high value.

The development of demonstration of CI and CM hardware subsystems, the development of an end-to-end mathematical system model, and the development of initial CONOPS and methodologies for estimating logistics and O&M requirements represent the entire technical scope of Phase II TACTIC.

The demonstration of an integrated CI and CM prototype TACTIC system (including command and control functionality), completion of an end-to-end mathematical system model, and refinement of CONOPS, logistics and O&M requirements represents the entire technical scope of Phase III (option) TACTIC.

DARPA requires proposals for the entire technical scope of Phase II and optional Phase III. Proposals that do not address the entire technical scope will be considered non-compliant with the requirements of this BAA.

While the earliest anticipated award is planned to occur in **May 2007**, the Government may select for funding any full proposal or portions of a proposal at any time during the year that the BAA is open.

7 Deliverables

With the exception of any financial information in the reports, the deliverables under this work may be released to outside organizations, both US Government and necessary support contract personnel, in support of efforts to develop systems for CI and CM of airborne CWA/BWA attacks. The performer may recommend a preferred format for each deliverable, but the final format will be determined by the Government.

Any deliverables or portions of deliverables that are classified must be handled in accordance with §10 of this PIP and the Security Classification Guide associated with the program.

Deliverables for Phase II:

Program Kickoff Report/CoDR (Kickoff Meeting): due two to four weeks after contract award. This report/meeting will provide an in-depth review of the Conceptual Design that forms the basis of the performer effort, including any modifications from the initial proposal. In addition, the performer will provide an updated master plan and schedule for the program, including any modifications from information provided in the proposal. The progress of the program must be reported using Earned Value Management (EVM) or other Cost/Schedule Status Reporting protocols. Any changes to the initially proposed CONOPS and logistics requirements development plans need to be clearly identified at this time. The briefing slides will be provided to DARPA in Microsoft (MS) PowerPoint format.

Quarterly Reports/Quarterly Program Reviews: due at three-month intervals from the date of contract award. These reports/reviews will describe, to date, the progress of the effort to transition from the Conceptual System Design, through the PDR, and to the CDR. At each quarterly review, the performer must present the results of: system trade studies, sub-system fabrication efforts, and testing carried out in performer facilities against the CI and CM goals described in §3. The status of the development of the model and its accuracy in describing the testing must be provided. In addition, the report/briefing must reference the master plan and schedule provided at the Kickoff/CoDR Meeting and offer amendments (agreed to by the Government). The progress of the program must be reported using Earned Value Management (EVM) or other Cost/Schedule Status Reporting protocols. Any changes to the CONOPS and logistics requirements development plans need to be clearly identified at this time. The briefing slides will be provided to DARPA in MS PowerPoint format.

PDR/Preliminary Design Report: due at the end of the first year, must include a detailed written report and an in-depth briefing for an audience of Government reviewers. The PDR must include: a full technical description of the component technologies and overall system, a full technical description of models (along with source code), a full technical description of all experiments and tests carried out during the effort, all data and analyses (including uncertainty analyses), the plan to move from the PDR to the CDR, detailed design information on the proposed integrated system, and updated CONOPS and logistics requirements plans. This multi-disciplined technical review will ensure that the system and all components can proceed to detailed design. The review will be conducted after preliminary design efforts and will ensure that the system can meet the standard performance

requirements for cost, schedule, risk, and other system constraints. Guidelines for the review can be found in section 4.3.3.4, “Technical Reviews during System Integration,” of the Defense Acquisition Guidebook (available on the Internet at <http://akss.dau.mil/dag/>). The briefing slides will be provided to DARPA in MS PowerPoint format.

Test plan and TRR: the test plan must be completed and approved by DARPA and the testing facility prior to commencement of Government testing at the end of Phase II. The test plan must include, at least, the number of tests to be carried out, the simulants/materials to be used, a detailed testing schedule, procedures by which the test gear will be installed and operated at the Government testbed, and updated CONOPS and logistics requirements development plans. Following approval of the test plan and installation of the test equipment at the testbed, a final TRR will be conducted. The TRR is a multi-disciplined technical review that will ensure that the system and all components can proceed into formal testing. The TRR will confirm that the required test resources have been properly identified and coordinated to support planned tests. The TRR will verify the traceability of planned tests to program requirements and user needs. The TRR will determine the completeness of test procedures and their compliance with test plans and descriptions. The TRR will assess the system for development maturity, cost/schedule effectiveness, and risk to determine readiness to proceed to formal testing. Guidelines for the review can be found in section 4.3.3.9, “Technical Reviews during System Demonstration,” of the Defense Acquisition Guidebook.

Final Report/CDR: to include a detailed, written report (MS Word format) and an in-depth briefing for an audience of Government reviewers. A refined SOW and cost (with technical and financial background) for a proposed Phase III optional effort must be presented. The CDR must include: a full technical description of the component technologies and overall system, a full technical description of models (along with source code), a full technical description of all experiments and tests carried out during the effort, all data and analyses (including uncertainty analyses), detailed design information on the proposed optional Phase III integrated system, and updated CONOPS and logistics requirements development plans. This multi-disciplined technical review will: (1) assess the final system design as captured in product specifications, and (2) ensure that the system and all components can be released for manufacturing. For a large, complex system, the CDR may be a progressive or instrumental review, culminating in a system-level CDR which ensures adequate interfaces between each system component. Guidelines for the review can be found in section 4.3.3.4, “Technical Reviews during System Integration,” of the Defense Acquisition Guidebook. This CDR is a program metric milestone that must be completed and approved by DARPA. Approval of the CDR program metric milestone is not a guarantee that the program will continue beyond Phase II.

Monthly Status Reports: will be written reports showing task schedule, current task status, and task costs-to-date. Tasks significantly behind schedule or over budget may require more documentation at the discretion of the Government. The progress of the program must be reported using Earned Value Management (EVM) or other Cost/Schedule Status Reporting protocols. Updates on the CONOPS, logistics, and O&M requirements development plans must be reported in each status report.

See Appendix E for additional sample reporting requirements.

Each performer will also be required to submit period reports on invention disclosure, election of title, and filing of patent applications.

Deliverables for Phase III (option):

Program Kickoff Report: due shortly after option approval. This report/meeting will provide an in-depth review of the Critical Design that forms the basis of the performer optional effort, including any modifications from the CDR. In addition, the performer will provide an updated master plan and schedule for the program, including any modifications from information provided in the option approval. The progress of the program must be reported using Earned Value Management (EVM) or other Cost/Schedule Status Reporting protocols. The briefing slides will be provided to DARPA in Microsoft (MS) PowerPoint format.

Quarterly Reports/Quarterly Program Reviews: due at three-month intervals from the date of option award. These reports/reviews will describe, to date, the progress of the effort to integrate the CI and CM subsystems with delivery platforms including any relevant test, analysis and model results, the status of the end-to-end system model development, and the status of CONOPS, logistics, O&M and C² development. In addition, the report/briefing must reference the master plan and schedule provided at the Kickoff Meeting and offer amendments (agreed to by the Government). The progress of the program must be reported using Earned Value Management (EVM) or other Cost/Schedule Status Reporting protocols. The briefing slides will be provided to DARPA in MS PowerPoint format.

Test plan and TRR: the test plan must be completed and approved by DARPA in advance of the Government testing. The test plan must include, at least, the number of tests to be carried out, the simulants/materials to be used, a detailed testing schedule, procedures by which the test gear will be installed and operated at the Government testbed, and updated CONOPS and logistics requirements development plans. Following approval of the test plan and installation of the test equipment at the testbed, a final TRR will be conducted. The TRR is a multi-disciplined technical review that will ensure that the system and all components can proceed into formal testing. The TRR will confirm that the required test resources have been properly identified and coordinated to support planned tests. The TRR will verify the traceability of planned tests to program requirements and user needs. The TRR will determine the completeness of test procedures and their compliance with test plans and descriptions. The TRR will assess the system for development maturity, cost/schedule effectiveness, and risk to determine readiness to proceed to formal testing. Guidelines for the review can be found in section 4.3.3.9, "Technical Reviews during System Demonstration," of the Defense Acquisition Guidebook.

Final Report: to include a detailed, written report (MS Word format) and an in-depth briefing for an audience of Government reviewers. The Final Report will contain a complete account of all experimental results, analysis, and models from the Phase II and III efforts and

will form the basis of transition of the system to the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD).

Monthly Status Reports: will be written reports showing task schedule, current task status, and task costs-to-date. Tasks significantly behind schedule or over budget may require more documentation at the discretion of the Government. The progress of the program must be reported using Earned Value Management (EVM) or other Cost/Schedule Status Reporting protocols. Updates on the CONOPS, logistics, and O&M requirements development plans must be reported in each status report

See Appendix E for additional sample reporting requirements.

Each performer will also be required to submit period reports on invention disclosure, election of title, and filing of patent applications.

8 Schedule

8.1 Solicitation Schedule

A Bidders' Conference will be held on **23 January 2007**, and participants must register by **16 January 2007** to attend (see §14.3 for details). To be considered for funding, proposals must be received as described in §14.5 by 1600 ET, **21 March 2007**. Source Selection will be completed in **April 2007**, followed by contracting (which is anticipated to take 45 to 60 days). Kickoff/CoDR meetings will take place in **May 2007**.

A tentative schedule of events and deadlines associated with BAA06-TSDD is shown in Table 1.

Table 1: Tentative schedule of events and deadlines associated with BAA06-TSDD

DATE	EVENT
05 January 2007	BAA released; PIP available
23 January 2007	Bidders' Conference
21 March 2007	Proposals due
May 2007	Anticipate contract awards

8.2 Performer Schedule

The period of performance for TACTIC Phase II and Phase III (option) is not specified but time is of the essence. The realism of the schedule and cost of the proposed effort will be an evaluation criterion.

8.3 Major Milestones and Activities

8.3.1 Phase II

- | | |
|----------------------------|---|
| ○ After contract award | Kickoff meeting/CoDR due |
| ○ Each Quarter | Quarterly Reports/Reviews due |
| ○ Midway through Phase II | PDR/Preliminary Design Report due |
| ○ Prior to Government test | Test Plan and TRR due |
| ○ Near end of Phase II | Refereed testing at Government facility |
| ○ End of Phase II | Final Report/CDR due |
| ○ Each Month | Monthly Reports due |

8.3.2 Phase III (option)

- | | |
|----------------------------|---|
| ○ At start of Phase III | Kickoff meeting |
| ○ Each Quarter | Quarterly Reports/Reviews due |
| ○ Prior to Government test | Test Plan and TRR due |
| ○ Near end of Phase III | Refereed testing at Government facility |
| ○ End of Phase III | Final Report due |
| ○ Each Month | Monthly Reports due |

9 Security

This BAA solicits proposals from all interested and qualified sources. All participants and/or individuals must meet security clearance requirements as spelled out in the TACTIC Program Security Classification Guide (CG)-383 (Appendix F) and comply with any necessary Non-Disclosure Agreements (NDAs), Security Regulations, Export laws, and other governing statutes that would be applicable under the circumstances.

DARPA will accept proposals that contain both unclassified and CLASSIFIED material up to the collateral SECRET level. All CLASSIFIED material must follow standard security marking guidelines (see Department of Defense (DoD) 5220.22-M, National Industrial Security Program Operating Manual (NISPOM)) that require individual sentence, paragraph, figure, and table classification markings to make it clear which parts of the document are CLASSIFIED and which parts may be extracted as unclassified content. Documents that have “blanket” security restricted distribution markings without specifically identifying CLASSIFIED or restrictive segments will be rejected.

An amended DD254 (DOD Contract Security Classification Specification) form will be issued upon contract award. A general DD254 form is provided in Appendix G.

If proposers choose to submit a proposal utilizing CLASSIFIED data from another Government source, they must first receive permission from the Original Classification Authority (OCA) to use its information in responding to this BAA.

Proposers should submit their research proposals with adequate protection. When research proposals are not otherwise CLASSIFIED, protection can be translated to ‘Company Proprietary’ (i.e., processing on a closed network, enforced need-to-know, and transmittal by means of registered mail). If a question exists regarding classification, please contact Ms. Erica Stewart, STO Facility Security Officer (FSO) at erica.stewart@darpa.mil or (703)248-7217.

In addition, the International Traffic in Arms Regulation (ITAR) may apply and should be considered in your proposal. Additional ITAR information is available at http://www.pmdtc.org/itar_index.htm. If a question exists regarding ITAR, please contact SID_International_Security@darpa.mil.

10 Funding

No specific funding target is provided. DARPA is interested in the most promising systems approaches for TACTIC Program. Proposed costs should be in line with the effort required for the proposed SOW to include both Phase II and optional Phase III. The Government will evaluate each proposal, on an individual basis, using the criteria listed in §13.2. Best value to the government will be a selection criterion.

The Government may incrementally fund any awards under this BAA.

11 Proposal Preparation Instructions

All proposals submitted must follow the instructions in this PIP and include only the information requested to avoid delays in evaluation or disqualification. It is anticipated that within 30 days of completing the evaluation, proposers will be notified that: 1) their proposal has been selected for negotiation, or 2) their proposal has not been selected. One hard copy of each non-selected proposal may be retained and filed for future reference- all other copies will be properly destroyed.

This BAA shall remain open for competition for one (1) year from the date of publication in the Federal Business Opportunities (FedBizOpps). Proposers may submit a full proposal in accordance with the instruction provided herein at any time up to the proposal due date to be considered for awards. All proposals received by 1600 ET on **21 March 2007** will be evaluated for potential award. The Government anticipates that initial awards will be made in **May 2007**. Proposers should submit multiple year proposals that align with their proposed POP for Phases II and III. Proposals must consist of three volumes: Volume IA – Technical Proposal, Volume IB – Threat Matrix Analysis, and Volume II – Cost Proposal. Proposals must be submitted in both printed and electronic (MS Word) formats.

All submissions must be in the following format (non-conforming proposals may be rejected without further review): single-sided, 8.5 × 11 inches, 12-point type, Times New Roman font, single-spaced with margins not less than one inch. Pages must be numbered sequentially. Restrictions on the page length of any specific section are indicated below. All pages that exceed the maximum page limit specified may be removed and not be reviewed or considered in evaluation.

All proposals should clearly indicate limitations on the disclosure of their contents. Proposers who include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall:

(1) Mark the title page with the following legend:

“This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this proposal. If however, a contract is awarded to this proposer as a result of, or in connection with, the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]”

(2) Mark each sheet of data it wishes to restrict with the following legend:

“Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.”

Markings like "Company Confidential" or other phrases that may be confused with national security classifications shall be avoided.

It is the policy of DARPA to treat all proposals as competitive information and to disclose their contents only for the purpose of evaluation. No proposals will be returned. The original of each proposal received will be retained at DARPA and all other copies of non-selected proposals destroyed. Documentation related to the source selection process will be marked SOURCE SELECTION INFORMATION – SEE FAR 2.101 AND 3.104.

Questions regarding proposal submission should be directed to one of the points of contact (POCs) listed in §14. Proposers are advised that only Contracting Officers (COs) are legally authorized to contractually bind or otherwise commit the Government.

11.1 Volume IA – Technical Proposal

Volume IA will be no longer than 50 pages in length, not including the cover page, table of contents, summary quad chart, Statement of Work (SOW), and appendices. Foldouts are discouraged. Only the first 50 pages of Volume IA of proposals will be evaluated. Proposals with fewer than the maximum number of pages are highly encouraged.

Volume I may include an attached bibliography of relevant technical papers or research notes (published or unpublished) which document the technical ideas and approach upon which the proposal is based. Copies of not more than three (3) relevant papers can be included with the submission. The bibliography and attached papers are not included in the page counts.

Requirements for Volume IA are listed below and must appear clearly and in the order indicated:

- a) Cover page*
- b) Table of contents*
- c) Summary quad chart *
- d) Executive summary
- e) Technical background
- f) Statement of Work*
- g) Description of resources and facilities
- h) Schedule/milestone chart
- i) Deliverables
- j) Roles and responsibilities
- k) Key personnel summary
- l) Ownership of products
- m) Organizational conflict of interest
- n) Appendices*

* Items not included in the Volume IA maximum page limit

11.1.1 COVER PAGE

The cover page must include the following information in the order indicated:

- a) BAA number: BAA06-TSDD
- b) BAA title: TACTIC Program – Phase II and Phase III (option) - System Development and Demonstration
- c) Proposal title: (as selected by proposer)
- d) Volume: Volume IA – Technical Proposal
- e) Prime proposer: (name of prime)
- f) Sub-contractors: (name(s) of sub-contractor(s) if applicable)
- g) Technical contact: (name, address, telephone number, electronic mail address)
- h) Administrative contact: (name, address, telephone number, electronic mail address)

- i) Type of business: (indicate: large business, small disadvantaged business, other small business, HBCU, MI, or other educational or non-profit organizations)

11.1.2 TABLE OF CONTENTS

The proposal must contain a table of contents identifying the beginning page of each section. The table of contents should also include a list of any figures, tables, pictures, diagrams, etc. and the page on which each can be found. A list of appendices should also be included.

11.1.3 SUMMARY QUAD CHART

The proposer will provide a single MS PowerPoint slide containing a chart summarizing the distinguishing features of the proposal. This chart must highlight the innovative techniques and concepts proposed and state the total cost of the proposed effort. This chart does not need to explain the TACTIC vision or goals. An example Summary Quad Chart is provided in Appendix H.

11.1.4 EXECUTIVE SUMMARY

The Executive Summary will provide a brief description of the technological approach to an integrated CI and CM of airborne CWA/BWA and an overview of the plans to carry out the work described in this PIP. Any outstanding features of the proposal that the proposer believes will distinguish it from other proposals should be highlighted here.

11.1.5 TECHNICAL BACKGROUND

Proposers must provide technical background for the SOW and describe the innovations and creative approaches to be investigated, with sufficient detail to convince the review panel of the potential of the approaches to meet the program goals. The material in this section must carefully and explicitly describe the physical mechanisms that are important to the success of the proposed work. It is expected that detailed technical background will be provided to support the SOW for the Phase II effort and that less detailed technical background will be supplied to support the SOW for the Phase III option.

Phase II

This section of the proposal must include the Conceptual Design and other relevant technical information.

The Conceptual Design must include, at a minimum:

- An overall system description including:
 - A block diagram of the overall system
 - Hardware (architecture, power distribution, chassis, cabling, etc.)
 - Software (architecture, operating system, platform, etc.)

- The approach for interface control
 - The approach for configuration control
- A description of selected CI and CM components to integrate into the system including:
 - A rationale for component choices (high value will be placed on components that have undergone rigorous large-scale testing against aerosolized CWA/BWA simulants and agents)
 - Potential dual-use concepts
 - The theoretical background of the CI and CM mechanisms:
 - ❖ The degree to which the mechanisms are understood
 - ❖ The path for elucidating the critical aspects of the mechanisms that are poorly understood, including sub-scale tests
 - ❖ Efficacy of chosen CI and CM technologies (experimental and/or theoretical)
- A description of CI/CM delivery and dispersal approaches and verification of CI/CM cloud insertion/interaction
- A description of the system modeling approach including:
 - A detailed mathematical model of CI and CM technologies
 - Scaling laws to describe predicted performance for outdoor field trials
 - A predictive model for the overall system performance
 - Figures of Merit (FOM) (e.g., area of battlespace affected with and without mitigation)
- A description of the proposed system CONOPS development plan for countering each of the threat scenarios outlined in the CLASSIFIED Appendix
- Identification and quantification of the logistics and O&M requirements development plan for the full-scale system

Other technical information, not part of the Conceptual Design, should include:

- A description of the detailed plan for evolving the Conceptual Design to a Preliminary Design and finally to a Critical Design
- A description of low and high technical risk issues (including a discussion of how risk is to be mitigated)
- The testing and analytical work that must be conducted in support of the PDR, including descriptions of the:
 - Number and type of simulant(s) addressed
 - Proposer testing facilities
 - Testing protocols

- Analysis protocols
 - CI/CM materials stability and shelf-life
 - Timely integration of existing vs. newly-developed CI/CM components
 - CI/CM limits of operation (temperature, humidity, resilience to degradative sources, performance deterioration in the presence of interferents, etc.)
 - System ruggedness and reliability
 - Payload (minimum CI/CM mass requirement for optimal performance)
 - Time requirements for complete CI/CM system implementation operationally (define time step(s) for each process and how to mitigate limiting step(s))
 - Optimal component configuration/integration
- A design that must be carried out to evolve the PDR to CDR including:
 - Trade studies on delivery platforms
 - Prototype FOMs
 - Discussion of critical targeting and timing issues
 - C² development and integration
 - Cost, complexity, and logistics

In all categories, proposers should provide preliminary data or results that support their claims. This material will serve as the technical foundation for the SOW to follow; that is, it must provide clear guidance for determining the work plan.

Phase III (option)

Technical background that supports the Phase III option SOW must be provided. The level of detail provided should be commensurate with the detail provided in the SOW. The technical background to support a detailed Phase III option SOW must be provided at the end of Phase II.

11.1.6 STATEMENT OF WORK

Proposers will provide a SOW describing the proposed plans for the Phase II and optional Phase III effort. The Phase II plan must be specific and detailed. The Phase III option plan may be more broadly outlined; a detailed version will be delivered at the end of Phase II.

The SOW must include:

A breakdown of the work necessary to carry out the development, implementation, testing, optimization, and evaluation of the integrated system. The work breakdown must be supported by the technical material in the preceding section.

A proposed plan, with a schedule, to complete the work. The plan is expected to show a concise approach for addressing unknown aspects of the technologies employed.

A plan to manage the efforts and integrate the technical contributions of team members or subcontractors (if applicable). The plan must include the EVM or other CSSR protocol that will be used to track the progress of the effort.

Whenever multiple approaches are proposed for any aspect of the effort, the SOW must clearly identify the primary and supporting or optional approaches, and the costs associated with each.

11.1.7 DESCRIPTION OF RESOURCES AND FACILITIES

Proposers must describe the facilities available for system development and testing. The availability of these resources for the duration of the work must be described. Organizations that do not have all of the technical capabilities and facilities necessary to successfully carry out this effort in-house should team with organizations that have complementary capabilities and experience.

When proposers plan to subcontract with outside organizations, these organizations, their capabilities, and their commitment to providing the needed support must be clearly identified. Any interactions or agreements with US Government facilities for this purpose must also be identified.

11.1.8 SCHEDULE / MILESTONE CHART

Proposals will include a graphical illustration of the schedule showing the major milestones in the SOW arrayed against the proposed time and cost estimates.

11.1.9 DELIVERABLES

Proposals must include a list of deliverables, correlated with the corresponding SOW tasks. At a minimum, proposers should include the deliverables listed in §8.

11.1.10 ROLES AND RESPONSIBILITIES

Proposals must clearly identify which organization(s) is responsible for performing each element of the SOW. The manner in which the prime proposes to manage and integrate these efforts must be specified and will factor into the proposal evaluation.

11.1.11 KEY PERSONNEL SUMMARY

Certain skilled, experienced professional and/or technical personnel are essential for successful completion of the work to be performed. These “key personnel” must be identified by name in the proposal. The prime organization Principal Investigator (PI) as well as the team lead person from each subcontracting organization(s) must be clearly identified. The key personnel will also be described concisely in the proposal appendix, with a summary of the qualifications and relevant past efforts of each including their expected critical contributions and amount of effort committed to this work for each contract year. All key personnel must work at least 25% of their time on this program. If one or more of the key personnel, for whatever reason, becomes, or is expected to become, unavailable for work under this contract for a continuous period exceeding 15

work days, or is expected to devote substantially less effort to the work than indicated in the proposal, the performer will immediately notify the DARPA Program Manager (PM) and CO and will, subject to the concurrence of the CO or his authorized representative, promptly replace such personnel with personnel of at least substantially equal ability and qualifications. Other personnel identified for work on the proposal but not identified as critical to the success of the effort should also be listed in the proposal appendix (see §12.1.14).

All requests for approval of such substitutions must be in writing and must provide a detailed explanation of the circumstances necessitating the proposed substitutions. They must contain a complete resume for the proposed substitute, and any other information requested or needed by the CO to approve or disapprove the proposed substitute. The CO, in collaboration with the DARPA PM, will evaluate such requests and promptly notify the performer in writing of approval or disapproval of the substitution.

If the CO determines that suitable and timely replacement is not reasonably forthcoming for key personnel who have been reassigned, terminated, or otherwise become unavailable for the contract, or that resultant reduction of productive effort would be so substantial as to endanger successful or timely completion of the contract, then the contract may be terminated by the CO for default or for the convenience of the Government, as appropriate. Alternatively, if the CO finds the performer at fault for the condition, the CO may choose to equitably adjust downward the contract price to compensate the Government for the resultant delay, loss, or damage.

All personnel assigned to the effort must meet security clearance requirements as spelled out in the Program Security Classification Guide and comply with any necessary NDAs, Security Regulations, Export Laws, and other governing statutes that would be applicable under the circumstances.

11.1.12 OWNERSHIP OF PRODUCTS

Noncommercial Items: (Technical Data and Computer Software)

Proposers responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS, shall identify all non-commercial technical data, and non-commercial computer software that it plans to generate, develop, and/or deliver under any proposed award instrument in which the Government will acquire less than unlimited rights, and to assert specific restrictions on those deliverables. Proposers shall follow the format under DFARS 252.227-7017 for this stated purpose. In the event that proposers do not submit the list, the Government will assume that it automatically has “unlimited rights” to all non-commercial technical data and non-commercial computer software generated, developed, and/or delivered under any award instrument, unless it is substantiated that development of the non-commercial technical data and non-commercial computer software occurred with mixed funding. If mixed funding is anticipated in the development of non-commercial technical data, and non-commercial computer software generated, developed, and/or delivered under any award instrument, then proposers should identify the data and software in question, as subject to Government Purpose Rights (GPR). In accordance with DFARS 252.227-7013 Rights in Technical Data – Non-commercial Items, and DFARS 252.227-7014 Rights in Non-commercial Computer Software and Non-commercial Computer Software Documentation, the

Government will automatically assume that any such GPR restriction is limited to a period of five (5) years in accordance with the applicable DFARS clauses, at which time the Government will acquire “unlimited rights” unless the parties agree otherwise. Proposers are admonished that the Government may use the list during the source selection evaluation process to evaluate the impact of any identified restrictions, and may request additional information from the proposer, as may be necessary, to evaluate the proposer’s assertions. If no restrictions are intended, then the proposer should state “NONE.”

A sample list for complying with this request is as follows:

NON-COMMERCIAL			
Technical Data Computer Software To be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

Commercial Items: (Technical Data and Computer Software)

Proposers responding to this BAA requesting a procurement contract to be issued under the FAR/DFARS, shall identify all commercial technical data, and commercial computer software that may be embedded in any non-commercial deliverables contemplated under the research effort, along with any applicable restrictions on the Government’s use of such commercial technical data and/or commercial computer software. In the event that proposers do not submit the list, the Government will assume that there are no restrictions on the Government’s use of such commercial items. The Government may use the list during the source selection evaluation process to evaluate the impact of any identified restrictions, and may request additional information from the proposer, as may be necessary, to evaluate the proposer’s assertions. If no restrictions are intended, then the proposer should state “NONE.”

A sample list for complying with this request is as follows:

COMMERCIAL			
Technical Data Computer Software To be Furnished With Restrictions	Basis for Assertion	Asserted Rights Category	Name of Person Asserting Restrictions
(LIST)	(LIST)	(LIST)	(LIST)

Intellectual Property and Patents

Please include documentation proving ownership of or possession of appropriate licensing rights to all patented inventions (or inventions for which a patent application has been filed) that will be utilized under the proposal. If a patent application has been filed for an invention that the proposal utilizes, but the application has not yet been made publicly available and contains proprietary information, the proposer may provide only the patent number, inventor name(s), assignee names (if any), filing date, filing date of any related provisional application, and a summary of the patent title, together with either: 1) a representation that the proposer owns the invention, or 2) proof of possession of appropriate licensing rights in the invention. Please also provide a good faith

representation that the proposer either owns or possesses appropriate licensing rights to all other IP that will be utilized under the proposal. If the proposer is unable to make such a representation concerning non-patent related IP, please provide a listing of the IP to which the proposer does not have needed rights, and provide a detailed explanation concerning how and when the proposer plans to obtain these rights.

11.1.13 ORGANIZATIONAL CONFLICT OF INTEREST

Each proposal will contain a section (not included in the page limit) to comply with the following requirements: all awards made under this BAA are subject to the provisions of the FAR Subpart 9.5, Organizational Conflict of Interest (OCI). All proposers and proposed sub-contractors must affirmatively state whether they are supporting any DARPA technical office(s) and/or RDECOM ECBC through an active contract or subcontract. All affirmations must state which office(s) the proposer supports and identify the prime contract number. Affirmations will be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of OCIs, as that term is defined in FAR 9.501, must be disclosed. This disclosure will include a description of the action the proposer has taken, or proposes to take, to avoid, neutralize, or mitigate such conflict. If the proposer believes that no such conflict exists, then it will so state in this section.

Only those proposers whose proposals are expected to result in contract award will be required to submit a completed and signed copy of "Representations, Certifications, and other Statements by Proposers or Quoters." The signed copy of this document is not required for the submission of a proposal unless specifically requested.

Certain post-employment restrictions on former federal officers and employees may exist, including special Government employees (including but not limited to Section 207 of Title 18, US Code, the Procurement Integrity Act, 41 U.S.C. 423, and FAR 3.104). If a prospective proposer believes that a conflict of interest exists, the situation should be raised to the CO before time and effort are expended in preparing a proposal. All proposers and proposed sub-contractors must therefore affirm whether they are providing scientific, engineering, and technical assistance (SETA) or similar support to any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the proposer supports and identify the prime contract numbers. Affirmations shall be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest (FAR 9.5) must be disclosed. The disclosure shall include a description of the action the proposer has taken or proposes to take to avoid, neutralize, or mitigate such conflict.

11.1.14 APPENDICES

Materials provided as appendices are not included in the maximum page limit for proposals:

PERSONNEL: the proposal must include a list of Key Personnel identified to work on the program, as described in §12.1.10. A concise resume must be provided for each person listed in this section, describing his/her qualifications and relevant past efforts.

ASSOCIATE CONTRACTOR AGREEMENTS: proposals must list all sub-contractor and other agreements, existing or planned, to support this work, including a description of the status of each such agreement.

GOVERNMENT FURNISHED PROPERTY/EQUIPMENT (GFP/GFE): if any portion of the research is predicated upon the use of Government-owned resources of any type, the proposer will specifically identify the property or other resource required, the date that the property or resource is required, the duration of the requirement, the source from which the resource is required, if known, and the impact on the research if the resource cannot be provided. If no GFP/GFE is required to conduct the proposed research, this section will consist of a statement to that effect.

CLASSIFIED MATERIAL: this part of the proposal must describe the capability of the proposed TACTIC system to counter each of the four threat release scenarios described in the CLASSIFIED Appendix of this PIP. If the CONOPS development plan for the proposed system is unable to counter any of the four threat scenarios, a statement to this effect must be made here and any modifications to the proposed system to mitigate this deficiency must be described.

11.2 Volume IB – Threat Matrix Analysis

This volume must describe how the TACTIC system proposed in Volume IA of the proposal can be employed against the specific threat agents and release scenarios detailed in the CLASSIFIED Appendix of this PIP. Because this volume is written in response to the CLASSIFIED material presented in the CLASSIFIED Appendix, it must be CLASSIFIED at the SECRET level. This volume must be separated from Volume IA and Volume II and must be handled using established methods for CLASSIFIED materials.

CLASSIFIED documents must contain the facility Corporate and Government Entity (CAGE) code, classified mailing address, and the FSO's name and telephone number. The CLASSIFIED documents and electronic media must be mailed/delivered in accordance with the NISPOM dated January 1995, Section 5-403. For information previously classified by another OCA, use the classification and marking guidance provided by the Information Security Regulation (DoD 5200.1-R) and the NISPOM (DoD 5200.22-M). CLASSIFIED information at the SECRET level may only be mailed via the US Postal Service (USPS) registered mail or the USPS express mail (USPS only; not DHL, UPS, or FedEx). All CLASSIFIED information must be enclosed in opaque inner and outer envelopes and double-wrapped. The inner envelope must be sealed and plainly marked with the proper classification and addresses of both the sender and the addressee. The inner envelope shall be addressed to:

Defense Advanced Research Projects Agency
Attn: Strategic Technology Office/BAA06-TSDD
3701 North Fairfax Drive
Arlington, VA 22203-1714

The outer envelop shall be sealed with no identification as to the classification of its contents and addressed to:

Defense Advanced Research Projects Agency
 Security and Intelligence Directorate, Attn: Central Document Registry
 3701 North Fairfax Drive
 Arlington, VA 22203-1714

Volume IB must be no longer than 20 pages in length, not including the cover page. Only the first 20 pages of Volume IB of proposals will be evaluated. Clarity in describing the analysis of the threat matrix will be used as an important indicator to reviewers during the evaluation process as to the ability of the proposer to plan and complete the work.

11.2.1 COVER PAGE

The Cover Page must include the following information in the order indicated:

- | | |
|----------------------------|---|
| a) BAA number: | BAA06-TSDD |
| b) BAA title: | TACTIC Program – Phase II and Phase III
Option - System Development and
Demonstration |
| c) Proposal title: | (as selected by proposer) |
| d) Volume: | Volume IB – Threat Matrix Analysis |
| e) Prime proposer: | (name of prime) |
| f) Sub-contractors: | (name(s) of sub-contractor(s) if applicable) |
| g) Technical contact: | (name, address, telephone number, electronic
mail address) |
| h) Administrative contact: | (name, address, telephone number, electronic
mail address) |
| i) Type of business: | (indicate: large business, small disadvantaged
business, other small business, HBCU, MI, or
other educational or nonprofit organizations) |

11.2.2 THREAT MATRIX ANALYSIS

Proposers must describe how the TACTIC system proposed in Volume IA can be used to classify/identify and counter the specific threat agents (to the performance requirements described in §3) and delivery systems detailed in the CLASSIFIED APPENDIX of the PIP. This description must include an analysis of the CI and CM challenges associated with each threat agent and release scenario.

11.2.3 CLASSIFICATION/IDENTIFICATION AND COUNTERMEASURE

A critical and necessary function of the TACTIC system is the rapid determination of the threat potential of materials released from the delivery systems described in the CLASSIFIED Appendix. The CI sub-system that accomplishes this determination can be designed to provide different types of information ranging from threat/non-threat determination to strain-level identification of a biological pathogen or identification of chemical agents with isotopic/atomic-level

resolution. The proposer must discuss the level of threat agent identification necessary for the optimal operation of the proposed system.

The level of knowledge about the threat is intimately connected to the CM technology. For example, if an inexpensive, safe CM technology for all agents (that requires minimal logistics) could be deployed, then the requirements on the CI system can be very relaxed. However, if the CM technology depends specifically on the strain of pathogen present, then very stringent requirements would be placed on the CI sub-system. This type of tradeoff analysis must be addressed within the proposal and must discuss, on an agent-by-agent basis, the challenges associated with the CI and CM technologies that have been chosen. Simulants for testing, that map onto the properties of the threat agents, must also be described in this section.

11.2.4 SYSTEM RESPONSE TO THREAT SCENARIOS

This section must describe how the proposed Phase III option TACTIC System will be used to counter the threat scenarios described in the CLASSIFIED Appendix. The CONOPS development plan for countering each of the threat scenarios must be described in enough detail that demonstrates the proposer's understanding of the selected CI and CM technologies as they relate to:

- Dispersion and propagation
- Fate in the environment
- Exposure effects on military equipment
- Exposure effects on protected and unprotected troops
- Timelines associated with the response
- Delivery platforms
- C² required
- Payload
- Logistics and O&M

The proposer must rank the threat scenarios from easiest-to-counter to hardest-to-counter and explain the rationale for the rankings. If countering any of the threat scenarios drives the system to extreme cost and complexity, then this should be explained. If the proposer believes it is not possible to counter any of the threat scenarios to the levels required, then partial mitigation strategies or modifications to the proposed system should be described.

11.3 Volume II – Cost Proposal

Cost proposals have no page length limitations; however, proposers are requested to keep cost proposals to 30 pages as a goal. The electronic version of the cost proposal must be provided on the same electronic media that contains the technical proposal.

The Cost Proposal must contain the following sections, in the order listed:

- a) Cover page
- b) Table of contents

- c) Budget summary
- d) Budget details

In addition, each cost proposal must contain a section that identifies the proposer's Taxpayer Identification Number (TIN) (DFARS 204.7202-3), CAGE code (DFARS 204.7202-1), and Contractor Establishment Code (CEC) (DFARS 204.7202-2). The codes provided must be those of the proposer and not of the principal place of performance, if the two are different.

Cost proposals shall contain sufficient detail to permit a review/analysis of the individual cost elements as the basis to determine cost reasonableness/realism.

11.3.1 COVER PAGE

The cover page is the same as that for Volume IA - Technical Proposal (see §12.1.1), except that item d) will read "Volume II – Cost Proposal."

11.3.1 TABLE OF CONTENTS

The cost proposal must contain a table of contents identifying the beginning page of each section. The table of contents should also include a list of any tables, etc. and the page on which each can be found. A list of appendices should also be included.

11.3.2 BUDGET SUMMARY

Proposals must include a separate budget summary including: the cost for each task identified in the SOW of the technical proposal, including the manpower levels of effort (labor hours and cost) by task, and the cost of equipment, travel, General and Administrative (G&A), and other expenses. Costs for team members or other sub-contractors must be clearly identified under the appropriate tasks, and the net amount, with cost breakdown, proposed for each organization must also be clearly labeled.

11.3.3 BUDGET DETAILS

The specific cost elements to perform the effort (including costs for team members and other sub-contractors) will be specified in detail, showing the information below by FY. Budget details must include:

- Labor hours for each labor category, divided into the tasks and subtasks identified in the SOW. Optional tasks/subtasks must be listed individually and priced separately
- Personnel (name, rate in dollars per labor hour, and percent time on project)
- Total cost by task/subtask identified in the SOW
- Total cost by labor category, with subtotals for each task
- Proposed performer-acquired equipment itemized with costs or estimated costs. An explanation of any estimating factors, including their derivation and

application, must be provided. A brief description of the procurement method to be used must be included

- Travel costs
- Materials costs
- Costs associated with the test facilities/support for the facilities
- Other direct costs (ODCs) or indirect costs
- Any other information important for supplementing the budget summary

12 Proposal Evaluation

12.1 Evaluators

It is the policy of DARPA and the US Army RDECOM ECBC to treat all proposals as competitive information and to disclose the contents only for the purposes of evaluation to US Government and necessary support contract personnel. The Government intends to use Government Contractor Personnel (GCP) as special resources to assist with the logistics of administering the proposal evaluations and to provide selected technical assistance related to proposal evaluations. GCP are restricted by their contracts from disclosing proposal information for any purpose and are required to sign OCIs and/or NDAs. Contractors involved in the source selection process will be barred from competing to provide services under BAA06-TSDD. Schafer Corporation (Arlington, VA) has been identified as the support contractor to provide initial support to the Source Selection Evaluation Board (SSEB). By submission of its proposal, each proposer agrees that the proposal information may be disclosed to these selected GCP for the limited purpose stated above. If the proposer does not send notice of objection to this arrangement, the Government will assume that the proposer consents to the use of subject matter personnel in review of the submittal(s) under this BAA. Any information not intended for limited release to GCP must be clearly marked and segregated from other submitted proposal materials.

Only Government personnel will make technical evaluations and award recommendations or decisions under this BAA.

12.2 Evaluation Criteria

Evaluation of proposals will be conducted using the following criteria, which are listed in descending order of relative importance:

- Scientific and Technical Merit
- Proposer Qualifications
- Cost and Schedule Realism

12.2.1 SCIENTIFIC AND TECHNICAL MERIT

The most important factor in evaluating the proposals is the scientific and technical merit of the proposed approach to solving the problem, especially the quality of that approach and its

completeness. The evaluation of merit includes the following specific aspects (note that sub-factors are not weighted):

- Overall system design
 - System design of hardware and software
 - Approaches for interface and configuration control
 - Number of agents, of different classes, to be addressed
 - Stimulant selection
 - Experimental design and protocols
 - Expected range of standoff or remote capability
- Choice of CI and CM technology components
 - Rationale for component choices
 - Theoretical background of CI and CM mechanisms
 - Expected CI sensitivity, specificity (P_d , P_{fa}), and speed
 - Expected ease of extending this CI sub-system to conduct post CM analyses
 - Expected speed and efficiency of the CM
 - Mechanism for providing delivery of the CM capability
 - Mechanism for providing a standoff or remote CI capability
 - Approaches for addressing limitations or unknowns about the technologies
 - Perception of capability of CI and CM sub-systems to integrate with existing military platforms
- System modeling approach
 - Detailed mathematical models of component CI and CM technologies
 - Predictive mathematical model for the overall system
 - Robustness of the modeling approach (applicability to various agents under variable conditions) and the quality of the plan to couple experimental data with modeling
- Approach for transitioning from a conceptual design to a preliminary design and critical design
- Technical risk assessment
- Description of potential human health or environmental concerns associated with the system technologies
- Innovations and creative approaches to be investigated
- Clarity and soundness of the proposed SOW
- Quality of the plan to integrate the technical activities with the management of sub-contractors or team members (if applicable)
- The proposed CONOPS development plan for countering each of the threat scenarios outlined in the CLASSIFIED Appendix
- The logistics and O&M requirements for the full-scale system to address the threat scenarios outlined in the CLASSIFIED Appendix

- The system performance against each of the threat scenarios outlined in the CLASSIFIED Appendix
- Expected likelihood of the proposer to meet the objectives of the BAA as described in §3 and §5 and for an award to result in the development and demonstration of effective and practical CWA/BWA cloud CI and CM system prototypes

12.2.2 PROPOSER QUALIFICATIONS

The next most important factor in evaluating the proposals is the demonstrated ability of the proposer to successfully carry out the proposed work. The evaluation includes these aspects:

- The proposer's capabilities, experience relative to the planned work, and past performance on programs of similar magnitude and technical complexity
- Capabilities of other team members or sub-contractors (if any) that complement the capabilities of the lead organization
- The proposer's resources and facilities committed to this work, as well as agreements with outside organizations for access to necessary facilities. The test laboratories are of particular interest.
- The selection of key personnel with the range of skills and expertise required to accomplish the tasking and their availability for the duration of the contract

12.2.3 COST AND SCHEDULE REALISM

Cost will be evaluated to determine whether the proposer's estimate is reasonable and realistic for the technical and management approach offered, as well as to determine the proposer's practical understanding of the effort. Cost reasonableness will be evaluated by assessing the number of labor hours and labor mix proposed, as well as the reasonableness of other cost elements (e.g., travel, materials, sub-contractors, etc.). All factors other than cost or price, when combined, are significantly more important than cost or price.

The proposed schedule will be evaluated in the same manner as the cost. Schedule reasonableness will be evaluated by the technical and management approach offered, as well as technology development milestones. Schedule realism will only be used as an evaluation criterion if there is reason to believe that the proposer has significantly under- or over-estimated the schedule required, however, time is of the essence in the completion of this effort.

13 Administrative Information and Proposal Submission

Information announcing and updating this BAA and PIP will be published on the FedBizOpps website at <http://www.fbo.gov>. Other material, such as program updates, initial registration to express program interest, and registration for all meetings, will be available through the TACTIC Program website at <https://dtsn.darpa.mil/TACTIC>.

This PIP, along with the FedBizOpps announcement, constitutes a BAA as stated in FAR 6.102 (d)(2)(i). Prospective proposers must refer to this PIP before submitting a proposal. This

announcement does not commit the Government to pay for any proposal preparation cost. The cost of preparing proposals in response to this BAA is not considered an allowable direct charge to any other contract. However, it may be an allowable expense as specified in FAR 31.205-18.

13.1 Solicitation Registration

All parties interested in this BAA should register their interest by providing the following information for their organization: name of organization, a principal POC, address, telephone number, and e-mail address. This information can be submitted directly on the TACTIC Program website at <https://dtsn.darpa.mil/TACTIC>.

13.2 Solicitation Website

At the time of registration, each organization will be provided a password for accessing the TACTIC Program website. Account activation will be granted to those organizations deemed technically qualified to carry out TACTIC prototype design and build; a 1-2 page Statement of Capabilities (SOC) that describes the proposer's relevant technical capabilities must be submitted to TACTIC@darpa.mil. This website will contain regularly updated information about this solicitation, as necessary. It will include a list of Frequently Asked Questions (FAQ) and respective answers. It is also the location where brief descriptions will be posted describing the capabilities of organizations interested in teaming opportunities.

13.3 Bidders' Conference

DARPA will host a Bidders' Conference for this solicitation that will take place on **23 January 2007** at Analytic Services, Inc. (ANSER), located at 2900 South Quincy Street, Suite 800, Arlington, Virginia 22206. Each organization that plans to attend this meeting must indicate their intention by registering on the TACTIC Program website (<https://dtsn.darpa.mil/TACTIC>). Each organization must provide the names of all planned attendees. Attendance will be limited. Additional instructions will be provided to those who register.

During the Bidders' Conference, organizations will have the opportunity to briefly describe their capabilities and interests to other attendees in an effort to form teams with the full range of technical capabilities necessary to respond successfully to this BAA.

13.4 Contacting DARPA

Contractual or administrative questions will only be answered if they are submitted to the TACTIC website or TACTIC@darpa.mil. The question and its answer (without the name of originator) will be appended to the FAQ file on the TACTIC website for viewing by all registered organizations. Inquiries may be submitted through the website after registration. Questions will be accepted until one month after the Bidders' Conference (**23 February 2007**).

13.5 Submission Process

Proposers must submit five (5) paper copies of their proposals and one (1) electronic copy. The printed versions must be bound; staples, paperclips, or binder clips will not be accepted. The

fixed media must contain the summary quad chart in MS PowerPoint format, the technical proposal in MS Word format, and the cost proposal in MS Word format with spreadsheets in MS Excel format (none of these files may be password protected or locked). The fixed media must be clearly labeled with: BAA06-TSDD, the proposer organization, the proposal title. To be considered for initial funding, proposals must be received by 1600 PM ET on **21 March 2007**.

13.6 Awards

Proposers are advised that only COs are legally authorized to contractually bind or otherwise commit the Government. The Government intends to issue awards based on the optimum combination of proposals that offers the best overall value to the Government. The Government reserves the right to award without discussions. The Government reserves the right to select for award all, some, or none of the proposals received in response to this announcement. The Government also reserves the right to select for award some portion(s) of the proposals received; in that event, the Government may select for negotiation all or portions of a given proposal.

Awards may be traditional FAR/DFARS contracts. The Government is seeking participation from the widest number of proposers. All responsible sources may submit a proposal, which will be considered by the Government. HBCUs and MIs are encouraged to participate. However, no portion of this BAA is set-aside for HBCU and MI participation due to the impracticality of reserving discrete or severable areas of technology for exclusive competition among these entities.

13.7 Subcontracting

Pursuant to Section 8(d) of the Small Business Act (15 U.S.C. 637(d)), it is the policy of the Government to enable small business and small disadvantaged business concerns to be considered fairly as sub-contractors to contractors performing work or rendering services as prime contractors or sub-contractors under Government contracts, and to assure that prime contractors and sub-contractors carry out this policy. Each proposer who submits a contract proposal and includes sub-contractors is required to submit a subcontracting plan in accordance with FAR 19.702(a) (1) and (2) should do so with their proposal. The plan format is outlined in FAR 19.704.

13.8 Export Licenses

The following provision will be incorporated into any resultant contract:

(1) The contractor shall comply with all US export control laws and regulations, including the ITAR, 22 Defense Federal Acquisition Regulation (DFAR) Parts 120 through 130, and the Export Administration Regulations (EAR), 15 Code of Federal Regulations (CFR) Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.

(2) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including

instances where the work is to be performed on-site at any Government installation, where the foreign person will have access to export-controlled technical data or software.

(3) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(4) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its sub-contractors.

13.9 Public Release or Dissemination of Information

The following provision will be incorporated into any resultant contract:

(a) There shall be no dissemination or publication, except within and between the Contractor and any sub-contractors, of information developed under this contract or contained in the reports to be furnished pursuant to this contract without prior written approval of the Contracting Officer's Representative (COR). All technical reports will be given proper review by appropriate authority to determine which Distribution Statement is to be applied prior to the initial distribution of these reports by the Contractor.

(b) When submitting material for clearance for open publication, the Contractor must submit the materials to the DARPA Technical Information Office (TIO) via <http://www.darpa.mil/tio/> and allow four weeks for processing. Viewgraph presentations must be accompanied with a written text. Whenever a paper is to be presented at a meeting, the Contractor must indicate the exact dates of the meeting or the Contractor's date deadline for submitting the material.

13.10 Award Administration Information

(1) Central Contractor Registration. Selected proposers not already registered in the Central Contractor Registry (CCR) will be required to register in CCR prior to any award under this BAA. Information on CCR registration is available at <http://www.ccr.gov>.

(2) Representations and Certifications. In accordance with FAR 4.1201, prospective proposers shall complete electronic annual representations and certifications at <http://orca.bpn.gov>.

NOTE: PROPOSERS ARE CAUTIONED THAT EVALUATION SCORES MAY BE LOWERED AND/OR PROPOSALS REJECTED IF SUBMITTAL INSTRUCTIONS ARE NOT FOLLOWED.